

L E T T E R S

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CONCERNING THE

INTERNAL DROPSY OF THE BRAIN,

TO CHARLES WILLIAM QUIN, M. D.

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PHYSICIAN GENERAL OF HIS MAJESTY'S ARMY IN IRELAND,
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FROM

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MEMBER OF THE ROYAL IRISH ACADEMY, AND CORRESPONDING
MEMBER OF THE LONDON MEDICAL SOCIETY.

MUSSABAT TACITO MEDICINA TIMORE.

LUCRETIVS.

D U B L I N:

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The Author's great Distance from the Press will, he hopes, plead his Apology for the following Errata, which the Reader is requested to correct.

E R R A T A.

Page 3 line 8 dele two inverted commas.

——14 — 8 *for* apoplexia *read* apoplexiæ.

——do. — 9 — hydrocephalica *read* hydrocephalicæ.

——do. — 18 — apoplexia *read* apoplexiæ.

——16 — 26 — efforts *read* effects.

——17 — 14 — error *read* error.

——18 — 13 — Savage *read* Sauvages.

——do. — 25 — proximated *read* proximate.

——20 — 21 — Phlegmons *read* Phlegmon.

——21 — 22 — dissection *read* dissections.

——24 — 28 — diaphanus *read* diaphanous.

——32 — 15 — depletions *read* depletion.

——37 — 9 — atomy *read* atony.

——59 — 28 — plaister *read* plaster.

——71 — 16 — ditto — ditto.

——78 — 24 — delignium *read* deliquium.

——80 — 29 — reviewed *read* viewed.

L E T T E R I.

S I R,

FREQUENTLY reflecting with concern on the rarity of Medical Works in this kingdom, and sensible of the limited state of our knowledge, respecting the nature of the Dropsy of the Brain, I read with pleasure the advertisement which announced your Treatise on this Disease; and give me leave to say, that my pleasure was not a little heightened by the perusal of that very respectable publication.

You appear to have condensed, and placed in an instructive point of view, the most material parts of what is generally known concerning that insidious and intractable malady. In particular, your division of it into a *chronick* and an *acute* species seems to be a very judicious mode of distinction. To your pathology of the latter species, on the first reading, I accorded without scruple; because it tallied with ideas which I had acquired on the subject.

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From

From what source I had imbibed those ideas, I did not then, nor for a considerable time afterwards, exactly recollect. At length, in looking over some notes, I discovered the origin from whence they were derived; and I found that I was indebted for them principally to the late Dr. Macbride. This ingenious physician, when treating of fevers, and remarking on the varieties of Nervous fever, writes thus: “In particular, the disease which Dr. Whytt has described so accurately under the name of Internal Dropsy of the Brain, appears to be a nervous fever, and might rather be termed the *Hydrocephalick Fever*, as the appellation of Dropsy gives an idea of a chronick disease. We may therefore consider this as a variety, distinct from the *febricula*, or *febris nervosa communis*.”

This extract is taken from the second edition of his *METHODICAL INTRODUCTION*, printed at Dublin, in 1777; the first edition being published in 1772; which, you'll please to observe, was seven years before the appearance of your Inaugural Dissertation at Edinburgh, in 1779.

In Dr. Withering's account of the Fox-glove, published in 1785, I find that he considers the *Hydrocephalus Internus* to be at the beginning dependent upon inflammation, or congestion; and that the water in the ventricles is a consequence, not a cause of the disease; and therefore that the curative indications ought to be extremely different in the first and the last stages. “Some years ago,” says this accurate

accurate observer, “ I mentioned these opinions, and the *success of the practice resulting from them*, to Dr. Quin, now physician at Dublin. That gentleman had lately taken his degree, and had chosen Hydrocephalus for the subject of his Thesis, in the year, 1779. In this very ingenious essay, which he gave me next morning, I was much pleased to find “ that the author had not only held the same ideas relative to the nature of the disease, but had also confirmed them by dissection.”

Such diligent inquirers, or indeed the drowsiest reader, could not turn over *Morgagni de Causis et Sedibus Morborum*, especially his letters on the diseases of the head, without conceiving a theory of this kind. To support this opinion, I shall beg leave to call your attention to one or two cases, in addition to those you have transcribed from the same author.

Analogous to your 6th case, in the same epistle, and 12th paragraph, he gives us one of a young woman, who, after being extremely heated by a journey in winter, was seized with a violent pain in the head, and an acute fever. Although under the influence of the sexual revolution, her pulse was strong and firm. She had no delirium; but was often reservedly silent; and with these symptoms she died in a few days. On opening the head, the inside of the cranium had a reddish brown cast, and the outside of the pia mater, where it covered the upper part of the brain, was smeared with a yel-

lowish kind of matter, which, although perfectly inodorous, resembled pus in consistence and colour. Concerning the real nature of this fluid, our author makes different conjectures; but to me it appears probable, that it was the gelatinous substance which is found on the surfaces of internal parts affected with inflammation.

An instance of a similar kind of fluid being found in the brain, we again meet with in the same author's 4th letter, and 6th paragraph. A slender man, forty years of age, labouring under an acute fever, lost the power of speaking on the ninth night; and when spoken to, showed not the least sign of understanding. At length, about the 13th day, he died. Stagnated serum lay between the brain and its membranes; and the ventricles were full of it; but in other respects, the brain seemed natural. This is reckoned by Morgagni a case of serous apoplexy; but from the make of the patient, the species of fever, and the time of its duration before the comatose symptoms supervened, I am led to conceive it to have been hydrocephalus internus. Against this idea, the brain, exclusive of what the writer calls stagnated serum, having been found in a natural state, does not furnish a conclusive reason, because the stagnated matter, or condensed gluten, is to be regarded as a consequence of previous inflammation, the usual marks of which might have been rendered rather obscure by the three or four days atonick condition of the encephalon.

These two cases, without taking up time in citing others, may serve to show, by their strongly marked phænomena, that even a cursory perusal of Morgagni must suggest the pathological opinion, *That hydrocephalus internus is caused by an accumulation of blood in the vessels of the brain*; the theory which you, after Macbride, and in conjunction with Withering, so happily adopted.

That your father, who was an eminent physician, did not avail himself of the advantages to be derived from the perusal of the celebrated Morgagni, would not only be an injurious, but an improbable supposition. Morgagni's work, in which we are here interested, was published in 1760; and the first case given in your collection in 1790, from Dr. Henry Quin, is dated in 1768; eight years after the appearance of the *Epistolæ de Causis et Sedibus Morborum*. Nor did Dr. Macbride's *Methodical Introduction* appear, until twelve years after the publication of those valuable *Epistles*.

Although Dr. Quin attended the case next stated, and occurring in the year, 1771, yet it does not appear from the circumstantial narration, that either he, or the consulting physician, entertained even a notion of your adopted theory, or apoplectick character of the distemper. That either of them did entertain such a notion, I do not think can be inferred from the language of the detail, nor from the mode of treating the patient. For we do not find the idea held by the parents, namely, that of
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the disease being a common fever, was contradicted by the Doctor, who accordingly permitted the administration of *James's Powder*; the consequence of which was, as might be expected, that the stupor very soon came on.

If Dr. Quin had felt even a faint conception of the present theory, would he in this case have prescribed, early in the disease, a remarkably strong vomit of *Ipecacuanha* and *Antimonial Wine*? Blood indeed was twice drawn; but it does not seem to have been done from any novel indication. On the contrary it appears, that he held only a common opinion of the disorder, most probably that of its being a bilious fever. For he says, "the serum was apparently bilious, the crassamentum *not* inflamed;" and this idea is carried through the greater part of the history. And, upon the same principle, we may presume, that the Blister, which was applied between the shoulders, was deferred until an advanced period of the disease.

Now, from these grounds, I would draw the following inferences: That Dr. Macbride, who must have been a reading man, in all likelihood acquired his opinion of the nature of *hydrocephalus internus* from the above work of Morgagni; that Dr. Withering drew his ideas of the disease from the same source; and that your father, from whom you derive, if he did not read Morgagni, took the hint from Dr. Macbride, with whom he could not fail of having frequent conversation, they being cotem-

porary and celebrated practitioners in the same city. Or, if they never had any conversation on the subject, is it at all probable that your father neglected reading the Methodical Introduction? Here he might have seen the leading features of the new theory, and, if copied from his design, would he not have soon proclaimed his title to the invention? But if the author of the Introduction be not indebted to your father for his ideas on the subject, permit me to ask, why your treatise is silent with respect to the suggestions contained in that respectable publication? Permit me also to inquire, why you have not recognised the discourse, beforementioned, which you had with the ingenious examiner of the digitalis? In my humble opinion, the concurrent support of two such distinguished authors, as Dr. Macbride and Dr. Withering, would be a valuable acquisition to any doctrine.

Let the honour of invention be conferred where it may, I must observe, that an objection seems to lie against the propriety of your conveying the term, Apoplexia, to the disease under consideration. The usual idea that is entertained of Apoplexy, is that of a sudden disorder, as signified by both its Greek and Latin names, *Apoplexia*, and *Attonitus*. The justness of these appellations is confirmed by medical records. Out of forty-six cases of Apoplexy, examined in Morgagni, I find that twenty-five of the patients died suddenly, or in a few hours; eighteen laboured under the disease some days; and the remaining three, *only*, languished a considerable time.

time. But it appears, that these tedious cases were rather paralytick, than of a true apoplectick nature.

To a name, were it merely a name, it would be frivolous to object. Yet when in this name is implied a quality, it is necessary to investigate its applicability to the subject. The apoplexy, or *apoplectick stroke*, as it is called, is not only precipitate in its nature, but is also a disease belonging to a period of life, very different from that in which *hydrocephalus internus* generally prevails. The subjects of the former are in a considerable majority *old*, whilst those of the latter are for the most part *young*. Amongst the forty-six cases of apoplexy before alluded to, we find twenty-six from fifty-five years of age to eighty-five, ten from forty to forty-three years, six from twenty-two to thirty-five years, one only uncommonly young, viz. fourteen years, and the ages of the remaining three not mentioned. On the contrary, the subjects of the latter, or *hydrocephalus internus*, are almost universally young. That this is the fact, the following synoptical view of forty-eight cases, compiled from authentick registries, will abundantly prove. And as a relative piece of satisfactory information, I shall add a small table showing the sex and event.

AGES.

From birth to two years	-	18
— three to five	-	13
— six to nine	-	6
— ten to twelve	-	6
— twenty to forty	-	5

SEX AND EVENT.

MALES.

FEMALES.

Died	16	Died	12
Recovered	15	Recovered	5
	<hr/>		<hr/>
	31		17
	31		
	17		
	<hr/>		
	48		

That the two diseases differ also considerably in their essential periods of continuance, is equally manifest from authorities, which, I suppose, you will not be inclined to dispute. In thirteen of your cases, I observe the following terms of

DURATION.

From ten to thirty days	-	9
Thirty-five days	-	1
Forty-two days	-	1
Chronick	-	2
		<hr/>
		13

DURATION IN NINETEEN CASES,

FROM DR. PERCIVAL.

Two weeks and under	-	7
From two weeks to three	-	6
— three weeks to four	-	4
— one month to six weeks	-	1
Three months with intermissions		1
		<hr/>
		19

By these examples of duration, it seems evincibly proved that few cases of real hydrocephalus internus terminate in less than ten days; whilst a review of the forty-six cases of apoplexy, extracted from Morgagni, cannot fail of convincing us, that a great majority of persons seized with this latter disorder are actually struck dead, or expire in a comparatively short space of time. And indeed you bear testimony also to the validity of this opinion, where you speak of confining yourself to the history of symptoms, as they occur in young subjects, “in whom the *slow* and *gradual* progression of them generally gives some regularity to the appearance of the disease — whereas when persons more advanced in life are attacked by it, the progress is in general more rapid, and the danger more immediately imminent, as the symptoms approach nearly to those of a *pure apoplexy*.”

It is true, you deem two cases, one aged fifty-two and the other twenty-five years, reported by Drs. Fothergill and Huck, not very common in the usual course of practice; but if, after a perusal of them, any reader entertains a doubt as to the *occasional* existence of the disease in adults, you refer him to the eleven first Epistles of Morgagni, from an attention to which you think he will be convinced that water lodged in the cavities of the brain, *accompanied by other appearances*, “is and has been a much more frequent cause of death, even in adults, than most physicians hitherto have imagined.” The validity of this deduction, I do not mean to contro-

vert: I only wish to establish, what you have very properly noticed, that the existence of hydrocephalus internus in adults is rather *incidental*, and certainly an unfrequent occurrence in the usual range of medical practice.

By adverting to the history of each of the disorders, we shall see a striking contrariety of character. The hydrocephalus is ushered in with all the symptoms of pyrexia: Languor, inactivity, diminished appetite, nausea, vomiting, hot and dry skin, quickened pulse, and disturbed sleep. This state having continued some days, in general five or six, moderate affections of one or both eyes take place, and the other circumstances are exasperated, with delirium, &c. until about the space of eight days longer. And, what is very much to my purpose, the teguments of the cranium are sometimes sore to the touch.

The disease then makes that remarkable transition, which denotes the commencement of its second stage; such as slow unequal pulse, less sensibility of pain, lethargick torpor, strabismus, &c. These symptoms are soon succeeded by those of the third stage—a regained equality of pulse, but so quick and weak, that it is hardly possible to number it; oftentimes a difficulty of breathing, *resembling* the stertor apoplectic; sometimes red spots or blotches on the body and limbs; impaired deglutition; and convulsions, which form the catastrophe:

Here then we have a deliberate progress, from stage to stage. But what have we in apoplexy?

Its assault is in general so impetuous, that the patient is as it were *thunderstruck*. The whole of the external and internal senses, and the whole of the voluntary motions are in some degree abolished; the sufferer falls down; snorts; and commonly dies. If life be protracted, the senses are rarely restored, the voluntary motions often continue impaired, and palsy is apt to supervene.

No doubt, in several cases, the apoplectick stroke is preceded by various symptoms, as frequent fits of giddiness, headaches, transitory interruptions of seeing and hearing, some false vision, degrees of temporary numbness, some faltering of the tongue, a loss of memory, and frequent drowsiness. But these are not symptoms of pyrexia, and are manifestly different from those that notify the introduction of hydrocephalus.

Besides, how contrarious are the habits of the parties obnoxious to these two diseases! You tell us, that persons liable to hydrocephalus have been extremely lively before its commencement, and of acute understandings. Very many of them have been observed to possess an unusual clearness of the skin, through which the veins are strongly portrayed, especially about the temples, forehead, and neck; a fullness, prominency, and lustre have been remarked in the eyes; and in a few cases the existence of a scrophulous taint has been suspected.

Contrast these tokens of temperament with those which appear in apoplectick cases, and observe the result. Persons of large heads and short necks, persons of a corpulent habit, persons who have passed an indolent life, and used a full diet, especially those who have indulged in frequent intoxication, are the usual subjects of apoplexy. Men who have long laboured under a copious and frequent hemorrhoidal discharge, upon either its suppression or spontaneous cessation, are particularly liable to be seized with this disorder. The cholerick, the hypochondrical, and those possessing what is called an atribiliary constitution, are also subject to it. Where now in this representation can we trace the fair skin, the blue veins, the plump brilliant eyes, or the scrophulous vitiation, the leading marks of hydrocephalick predisposition?

In which of the celebrated divisions of apoplexy would you place the apoplexia hydrocephalica? With the *sanguineous*? Or with the *serous*? In three of your six cases, where the body was opened, we find that the blood vessels of the brain were very turgid; in one of them were patches of inflammatory crust; and each of these four produced likewise a good deal of serum. The other two had serum; but no distension of the blood vessels is mentioned. From this scrutiny it appears, that our answer to the preceding questions ought to be—The hydrocephalus belongs to both species of apoplexy—but this would be absurd.

You will nevertheless say, as indeed you have already said, that it belongs neither to *sanguineous* nor *serous*, for it is of itself a distinct species; and in compliance with your theory, has our great Nosologist, Dr. Cullen, made it the third variety of his Genus, *Apoplexia*. But he owns that, as it is hard to collocate in a system of Nosology diseases which vary in their progress, “ideoque apoplexia hydrocephalica locum maximum idoneum assignare difficile est.” And for preferring this station he assigns no better reasons, than because it is not evident to the senses, like external hydrocephalus; because it differs also from the latter in its symptoms; and because it bears a great resemblance to apoplexy in its proximate cause and *towards its end* —— his words on this point are, “denique, quia causa proxima et tandem symptomatis, apoplexia quam maxime affinis est.” Yet in his character of it, he strongly corroborates my opinion: “Apoplexia hydrocephalica paulatim adoriens; infantes et impuberes, primum lassitudine, febricula et dolore capitis, dein pulsu tardiore, pupillæ dilatatione, et somnolentia afficiens.”

That the analogy does not hold good, is farther proven by dissection. Out of the forty-six cases of apoplexy, before cited, in twenty-four extravasated blood, frequently to a considerable amount, was found in the brain, accompanied generally with little or no water, but sometimes with a good deal. In nine of the cases, turgescence with various quantities of water took place. In the remaining eleven,

a diversity of appearances occurred irregularly, viz. pus, serum, vesicles, turgescence, and extravasation. In some the serum was acrimonious, as its saltish taste proved, in which so faithful an evidence as Morgagni would not deceive us; and in others, prodigious caverns were formed in the substance of the brain.

Compare this statement with what is related in your dissections, and we discover no such combinations of phænomena in your accounts—No extravasation of blood with turgidity or serum; no preternatural cavities; no purulent matter; nor any saline taste in the effused fluid. As to this fluid, you expressly say, that it is always void of acrimony. Besides, apoplexy very often arises from diseases of the heart and large arteries; from morbid affections of the lungs; and from disturbances in the abdominal viscera; which are not the causes that the subjects of hydrocephalus are apt to generate.

As justly might we conceive an analogy between mania and hydrocephalus internus, as between it and apoplexy, because, in cases of insanity, we are taught by dissection, that the blood vessels of the brain are often turgid and red; that water is collected within the membranes and ventricles; and that, although the substance of the brain be generally harder than usual, it is sometimes partly soft and partly hard. For confirmation of this I beg leave to refer you to the 8th and 61st letters of Morgagni,

gagni, where you will find ten anatomical examinations to this effect.

Nay were we to persevere in following the same clew, we would observe phænomena, in bodies dead of various disorders, similar to those that appear on opening maniacs. Consult the 4th section of a very learned work, Arnold on Insanity, and you will find, that, after diseases which had chiefly affected the head, or seemed to have derived their origin from it, but had not been attended with the smallest symptom of real Mania, scarcely a single appearance has occurred on dissection in the one case, which has not been likewise discovered in each of the others. Hence we might have grounds for appropriating Mania, Phrenitis, Epilepsia, and other qualifying terms to hydrocephalus, as well as for adjoining to it that of *apoplexia*. Aware of this objection, indeed, you acknowledge its force; but confess that you cannot give any very satisfactory answer. However, in suggesting the circumstance of age as a material cause for the difference between apoplexia hydrocephalica, and the true apoplexy of adults, you support my opinion, that children are most liable to the former. “It seems highly probable,” you remark, “that the brain of children is much less sensible to the efforts of stimuli or pressure, than it afterwards becomes at a more advanced age.”—a property which several observations conspire to ascertain. To your observation stating the forcible compression which the brain of infants endures at the time of birth, I would add, that the contents of

the cranium in childhood bear the effects of fracture and depression in a degree far exceeding what can be borne by the encephalon of adults, and to an extent, which, if applied to the brain of the latter, would be to these immediately fatal.

To give greater latitude to reasoning or speculation on a subject which you think can effectually be illustrated by facts only, you consider inadmissible. Facts, it is true, when an adequate number can be obtained, are the best grounds on which reasoning can be built. But when they are few, deductions from them will not be very satisfactory; the facts themselves are often fallacious; and false experience is a source of considerable error in Medicine. We are frequently obliged, in subjects intricate and interesting like the present, to indulge in speculation, and to endeavour from small data, to acquire, by means of our rational faculties, a release from total uncertainty, if we cannot attain entire satisfaction; at any rate, in the exercise of those powers, we may gain a more accurate method of thinking on the subject, which may finally lead to something instructive concerning it. Give me leave, therefore, to say in the words of the poet,

“ Together let us beat this ample field,
Try what the *open*, what the *covert* yield.”

Endeavouring always, during the pursuit, to “*eye nature’s walks*,” and never inconsiderately turn aside from them in tracing the causes of morbid phænomena.

In this research, I trust, that we may hit upon at least a plausible answer to the question which you have stated, but have left unsolved; namely, If, as laid down in your theory, the apoplexia hydrocephalica arises in the first instance from a morbid augmentation of blood in the vessels of the brain, why do the symptoms in any respect deviate from those undoubtedly proceeding from the same cause in *Phrenitis* and *Apoplexy*?

To investigate this point, we must take a view of the nature of the different kinds of inflammation. The best modern doctrine on this subject appears to be that which (pursuing hints from Savage and other celebrated Nosologists) is ably maintained by the ingenious Dr. J. C. Smyth, in the 2d vol. of the London Medical Communications. The principal causes of specific distinction amongst various forms of inflammation, he refers to one or other of the four following circumstances:—1st. the cause exciting the inflammation; 2d. the function, or use in the animal œconomy, of the part inflamed; 3d. the natural texture or structure of the same; 4th. that texture or structure of a part which is not natural to it, but is the consequence of some previous disease.

That the proximated cause, according to the language of Pathologists, is in every instance one and the same, is a doctrine which is here freely admitted; yet it is maintained, that the remote causes, the objects of sense and of observation, are widely differ-

ent, and have considerable influence in varying both the external marks and the nature of the disease. Thus, for example, the appearance, termination, and method of cure in the Angina, or inflammation of the fauces, are very dissimilar, where the malady has been produced by cold ; has been excited by a venereal infection ; or has been occasioned by contagious miasmata.

The second circumstance, viz. the function of the part affected, productive of specifick distinction amongst inflammations, is perhaps the least important of any, but, from being the most obvious, has given rise to the greatest number of divisions in those complaints ; as testified by the long list of names to be met with in every medical book on the subject. No doubt there is a propriety, and even an advantage in distinguishing with accuracy the organ immediately affected by inflammation ; yet it is equally certain, that, in all such cases, the great diversity in the symptoms is more imputable to a difference in the function of the part engaged, than to any specifick variation in the nature of the inflammation.

The third circumstance mentioned as a source of characteristick discrimination amongst these diseases, was the peculiar texture or structure of the part inflamed ; a circumstance which, though hitherto neglected, or but slightly noticed, seems to constitute some of the most important distinctions of this class of disorders. For experience has long taught us,

that every part of an animal body, the cuticle and hair perhaps excepted, is liable to inflammation ; and by carefully observing the phœnomena, it will be found no less manifest, that, according to the nature of the part concerned, the disease assumes a different appearance ; is attended with different symptoms ; becomes more or less severe ; and requires a different, nay sometimes an opposite, mode of treatment.

Without pretending to ascertain all the various shades of inflammation, according to the great diversity of structure in the several parts of the human body, our author only proposes to give the outlines of some of the most obvious and striking distinctions derived from this origin. He therefore considers the following, as distinct species of inflammation, each of them having a strongly-specified character, which, in every instance, seems entirely dependent on the peculiar structure of the part inflamed.

- 1st, The Inflammation of the Skin ——— *Erysipelas.*
- 2d. ————— Cellular Membrane ——— *Pblegmons.*
- 3d. ————— Diaphanous Membranes.
- 4th. ————— Mucous Membranes.
- 5th. ————— Muscular Fibres.

As the first, or erysipelatous inflammation is essentially a disease of the skin, a part differing in texture, &c. from any of the contents of the cranium ; and as that species of it assuming any analogy, namely, the Sideratio, is a critical solution of the attendant fever ; it does not appear to bear that affinity to our disease, which would justify its use for the purpose of

of illustration. Neither does the phlegmon, which is an inflammation of the cellular membrane; nor does the inflammation of pituitous membranes, whose texture differs materially from that of the meninges of the brain; nor in any measure does the inflammation of muscular fibres seem applicable to this purpose.

I shall, therefore, confine my attention to the 3d species, the inflammation of Diaphanous Membranes; a disease which is at present more known by its termination, than by its symptoms. Under this name are comprehended all those membranes possessing a firm hard texture, and a certain degree of transparency; such as the pleura, peritonæum, pericardium, meninges of the brain, &c.

From the small share of sensibility which those membranes, in their natural state, seemed to enjoy, it had been too hastily concluded, that they could not be the seat of inflammation or of acute pain. But it is unnecessary to take up time in refuting an opinion, which is sufficiently contradicted by the symptoms of the disease, and by the numerous dissection of morbid bodies. The particular symptoms which characterize the inflammation of these membranes, are not yet fully ascertained. That it is attended, however, with considerable pain, and with a high fever; and that the fever is in proportion to the inflammation and pain; appear to be facts substantiated by observation. But from those diseases with which it is liable to be confounded, it is particularly distinguished by its termination.

Diaphanous membranes, in consequence of inflammation, become thickened, opaque, and sloughy, with mucous or purulent exudations on their surface, sometimes causing preternatural adhesions; at other times the cavities lined by those membranes are found to contain a turbid serum, with filaments floating in it. These phænomena, jointly or separately, occur in pleurisy, peritonitis, &c. Besides, dissections abundantly prove, that the membranes of the brain, both dura and pia mater, are likewise subject to inflammation, connected frequently with fever; and that this inflammation terminates in a manner similar to the others.

Amongst the causes of inflammation peculiar to diaphanous membranes, the serophulous virus is justly accounted one; and this virus is reckoned both by you and Dr. Percival to be a predisposing cause to hydrocephalus internus. Now, seeing that we have so powerful an agent, frequently present in the constitution, ready to produce the proximate cause, or that which constitutes the inflamed state, may we not conclude, that an inflammation actually takes place in the brain, and that it is of the species which attacks diaphanous membranes?

This supposition, by turning to the history of hydrocephalus, is found to receive material support from remarking some of the leading symptoms of the disease, as fever, headach, and other appearances indicating topical determination, especially to the contents of the cranium. Nay further, I think that a contemplation of the symptoms, compared

with dissections and the inflammation of diaphanous membranes, justifies me in venturing a step beyond you, and leads me to believe, with Dr. Withering, that hydrocephalus internus originates in inflammation, and that the water found in the ventricles of the brain after death is the consequence, and not the cause of the disorder.

The scrophulous taint being admitted a remote cause of the disease, as above noticed, does not furnish a tenable objection against its originating from inflammation. It is true, Dr. Percival does not doubt, from several cases which occurred within the circle of his observation, that the disease under enquiry is caused sometimes by inflammation. Yet he believes, that it most frequently arises from glandular obstruction, and either local or general plethora.

That a morbid condition in the lymphatick, and a plethorick state in the sanguiferous system, either partial or total, may be indirect, or predisposing causes of hydrocephalus, I do not mean to deny. But I cannot comprehend how the conglobate glands of the brain, if it contain any, or even the lymphatick vessels which it is supposed to possess, can grow diseased so as directly to occasion the hydrocephalus internus. If any lymphatick glands or vessels belong to the brain, and that these become obstructed, would they not have been detected in this state by dissection? And, if they be obstructed, would not the consequent enlargement and impeded absorption produce sudden marks of oppressed brain, instead of

that

that proceſſion of ſymptoms obſerved in genuine hydrocephalus? As to the influence of exterior lymphaticks, are not thoſe adjoining the head even long and grievouſly diſtempered, without immediately inducing any hydrocephalick affection?

Nor do I ſee in what manner a ſanguineous plethora, whether topical or general, will directly cauſe thoſe ſymptoms which indicate the preſence of hydrocephalus. If the plethora be topical, it would moſt probably occaſion what Hoffman calls a hæmorrhage in the brain, or ſanguineous apoplexy; which, as I have already ſhown, is a diſeaſe very different from that whereof we are expreſſly treating. For we may very well conceive, that a turgescence of blood in the brain, without a degree of tone in the veſſels to ſupport it, would be apt to terminate in extravafation; and it is certain that, when the plethora is general, many more common outlets than thoſe within the cranium, are the vents through which it is diminifhed. On the other hand, when thoſe veſſels poſſeſs a tonick power, accompanied with either ſtates of plethora, a moderate ſtimulus ſhall excite inflammation, which may end in atony and ſerous effuſion. And as to the operation of diſeaſed lymphaticks, it ſeems explained by a former obſervation, that is, the diſpoſition of the ſtrumous taint to produce an inflammatory diſtemperature in diaphanus membranes, and conſequently a ſimilar condition in thoſe of the brain. I therefore conclude, that glandular obſtruction and plethora of both ſorts, are not direct cauſes of hydrocephalus,

but are to be reckoned merely those tending to introduce that state, which is more immediately productive of the disorder.

To elucidate this opinion, I request your attention to the physiology of the vessels and fluids of the brain in those peculiarly subject to this disease. The capacity and force of the heart, I observe, in proportion to the system of vessels, is greater at the beginning of life than at any afterperiod; at the same time a greater quantity of blood is contained in the arteries, proportionably to what is contained in the veins; and the vessels of the head likewise receive a greater quantity of blood, in proportion to the rest of the system. — And in young persons also, the lymphatick system is fuller than in the old.

We have, then, force in the arterial system, quantity of blood in the same system, and determination to the vessels of the head in those periods of life in which the hydrocephalus evidently prevails. Besides, that a plethorick state is apt to produce inflammation, seems demonstrated by the phenomena apparent in active hæmorrhagy, in which not only this state, but a sanguine temperament are observed to take place. On these occasions, before the blood flows, there are some symptoms of fulness and tension about the part from which it is to issue. Some redness, swelling, and sense of heat are perceptible in such parts as fall under view; and, in the internal parts, from which blood is to proceed, there

there is a sense of weight and heat; and in both cases, various pains are felt in the adjoining parts.

When these symptoms have subsisted for some time, pyrexia, or fever, supervenes; in which the pulse is frequent, quick, full, and often hard; and blood drawn from a vein, upon its concreting, commonly presents the gluten separated, or the buffy coat formed, as in cases of inflammation. Moreover, young people, even those in a state of childhood, are very liable to active hæmorrhagy from the nose, which particularly proves the impetus to the carotids, or principal blood vessels supplying the head. Hence I infer, that persons, subject to hydrocephalus internus, are such as inherit not only partial and general plenitude, but inflammatory diathesis; and consequently, that Dr. Percival's objections against a degree of inflammation being the immediate cause of the disease, are not as yet sufficiently founded.

Perhaps what the Doctor calls a dropical metastasis may be adduced to corroborate the doctrine of inflammation. He tells us, 'that an affection of the brain, which appeared to be hydrocephalick, and probably originated in inflammation, was suddenly and completely relieved by the attack of an acute pain in the side, which terminated in a fatal abscess and hydrothorax. On the other hand, the strongest symptoms of phthisis, such as coughs and stitches in the breast, he observed cease almost entirely in a few days, and soon to be succeeded by signs of hydrocephalus

drocephalus, viz. dilatation of the pupils and strabismus. These translocations from one membrane to another similar one, reciprocally from those of the brain and thorax, which, we have seen, are both of the diaphanous kind, appear rather owing to a translocation of action, than a metastasis of fluid. For it is not reasonable to suppose that an effused fluid, especially in the brain, could be so quickly transported; whereas we are certain that an inflammatory action is rapidly transferred from one position to another.

From these considerations it appears, that hydrocephalus internus may be essentially a species of inflammation connected with a plethorick state, or with a scrophulous vitiation, or sometimes with both. And now we may easily conceive why the symptoms differ, in many respects, from those occasioned by that which you repute the same cause, a turgescence of the vessels in the head, subsisting in *Phrenitis* and *Apoplexy*.

This conclusion is supported by collateral evidence drawn from the occurrence of anomalous phenomena in those very cases of the disease, wherein it is supposed to proceed from the same cause—a watery collection in the cavities of the brain. For did a collection of this kind always take place, or were it the parent of the disorder, would not the symptoms of compressed brain early or constantly show themselves in a striking manner? That they do not early appear, in a great number of cases, must be universally acknowledged; and, that they
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are not constantly present in every case, must be equally granted; because it is certain, that the distemper has occurred, where those symptoms have been wanting, even in its advanced stage.

The dilatation of the pupils, the squinting, the screaming, have not appeared from beginning to end, yet the disease has been considered an hydrocephalus; and, on opening the head, the vessels of the meninges have been found *red* with blood, the ventricles generally containing serum, but sometimes entirely without it. Nay the very contrary of the leading pathognomonick symptom, dilatation of the pupils, has been observed to take place, as we find in a case, related by Mr. Hooper, in the first Volume of the Memoirs of the London Medical Society. In this instance, the pupils were *contracted*, and remained unaltered by different degrees of light falling on the eyes; yet, the head being opened, half a pint of clear water was found in the ventricles of the brain.

I have the honour to be, &c.

L E T T E R II.

S I R,

IF the nature of the real hydrocephalus internus be inflammatory, as I trust the preceding Letter will manifest, your indications of cure are particularly well adapted to rebate or remove it. But Dr. Percival, although he commends your view of the disease, is inclined to ascribe less to inflammation than you do, and advises much caution in the use of blood-letting, even in its first stage. “For,” says he, “the vessels of the brain seem quickly to lose their tone by distention; and great torpor and debility of the whole system succeed.” Yet since he admits that distention exists, and thinks that it quickly diminishes the tone of the vessels in the brain, why dissuade from early blood-letting, which seems to be the most effectual means for obviating this distention? He might have observed, that, however strongly you suspect a congestion of blood in the brain to be the cause of the symptoms, you also consider general

ral and copious bleeding as a hazardous expedient; that you prefer local evacuation by means of leeches, or cupping and scarifying; and that you do not proceed to the opening of the jugular vein or temporal artery, except it can be done with apparent safety.

Your practical aim here, according to my view of the disease, is judiciously directed; and is not only admissible, but I believe in some degree eligible, even in an advanced stage of the disorder. I likewise concur in your proposal of recommending, on the authority of Morgagni, deep incisions to be made in the occipital veins. In one case, a boy six years old, Dr. Withering, agreeably to his belief of an inflammatory state, directed early in the disease six ounces of blood to be taken from the arm, and the temporal artery to be opened the succeeding day. In five days after, he gave an infusion of *folia digitalis*; the effect of which was an increased secretion of urine; and the patient soon recovered.

By the bye — you do not appear to have been so fortunate in your trials of the *digitalis*, though its diuretick qualities fully answered your expectations. With this intention, however, you believe that it had not been prescribed, until it was administered under your immediate inspection to a patient, in the year, 1786. But give me leave to refer you to Dr. Withering's Account of the Foxglove, where you will learn, that he used this plant in hydrocephalus six years before you did; and this Account was published a year before your case occurred, but did

did not, perhaps, fall into your hands. That he prescribed it on principles similar to yours, cannot be doubted; because the trial was made in the early period of his experiments, when its qualities as a diuretick were the leading objects of his attention. Accordingly we find him, in treating a patient the succeeding year, expressly mention that he directed the digitalis in consequence of his judging the latter stage of the case to be due to the effect of a watery effusion in the brain.

The confidence which you place in the use of blisters applied to the head, and in the efficacy of a subsequent drain, is in my opinion well founded. As to their mode of operation, I would consider it similar to that in pleurisy; and, supposing the primary disposition of hydrocephalus internus to be phlogistic, I should hope that their effects, by a studious attention, might be rendered comparatively salutary. If they so prove, they will probably operate, as you observe, by giving greater activity to the external vessels of the cranium, and checking the flow of blood into those more deeply seated; or, by diminishing the volume of fluids circulating in the cranium, they may lessen the degree of pressure on the brain, which must take place where the vessels are unusually turgid.

Whatever may be their mode of operation, it is certain that they have been freely and advantageously employed by many eminent practitioners. Doctor Ambrose Dawson, in particular, advises to

cover the whole head with a blister; to apply blisters behind the ears; and to keep them all open. Although he lays much stress on opiates, he trusts considerably to blisters, which he repeatedly used in two cases that terminated successfully. To shake our faith in this character of blisters, Dr. Percival soon after tells us that Dr. Dawson informed him, that his notes were not sufficiently minute to ascertain the cases to be of the malady in question. Besides, he at the same time avers, that he never saw any instance in which they could be said to produce other than palliative effects; yet some years afterwards, in 1791, he seems to think favourably of them, especially when applied to the head for the purpose of depletions. He goes farther: "Under every circumstance of the disease," says he, "blisters are expedient; and the application of them should be renewed as often as can be done without exciting strangury."

That blisters, as above stated, act through the medium of a vascular connexion between the external and internal parts of the head, is an opinion which can be strongly exemplified. To say nothing of anatomical demonstration, we have a striking evidence of this connexion in a case related by Morgagni. A morose pedagogue, seizing a country boy by the hair on the crown of the head, shook and dragged him violently. The result was, that the boy became immediately apoplectick, and died the following night. The pericranium on the crown of the head was found torn from the periosteum; a considerable

considerable quantity of blood lay on the dura mater; and, the vessels connecting this membrane to the parts beneath it being ruptured, blood was effused within the lobes of the cerebrum, and had penetrated quite down into the ventricles. Whilst this instance of barbarity confirms the above mentioned connexion, it serves to enliven our hopes of the advantages to be derived from external applications to the head, in the malady we are endeavouring to investigate.

From one external application to the head, which you have noticed, I mean that of cold, considerable benefit would probably ensue. As no case occurred to you in which it was employed, you confess that you are led to mention it rather from a wish to have it tried, than any experience of its good effects. But has it not been tried? To show that it has, give me leave again to refer you to the same book of Dr. Withering, by which you will perceive, that this attentive practitioner did not neglect the application of cold in a powerful manner, that is, by dashing six pints of cold water upon the head shaven, and repeating it every fourth hour. Had you met with this book, I presume, that you would have availed yourself of such good authority to support this indication of cure. And why you should not meet with it; or, if it did by chance come in your way, why you do not take any notice of it; to me seem rather extraordinary problems — especially when I reflect on the conversation that passed between you and the author, in 1779, as before quoted; and recol-

lest that his book appeared five years before your last publication. That you never at least *heard* of the celebrated Account of the Foxglove, in which so honourable mention is made of your name, it would be preposterous to suppose. And on hearing of it, who, in the same case, would not have been impatient to have got it into his possession?—Be this as it may, the application of cold to the head, the expedient under consideration, should probably be confined to the early stage of the disorder, with a view to moderate inflammatory disposition; because in the more advanced periods, or when mercury is administered, it might either interfere with this remedy, or rebuke the sweatings of the head, which have been found very advantageous.

Your mode of regulating the administration of catharticks appears so judicious, that I should not make any remarks concerning their use, were they not preferred by Dr. Percival before blood-letting, as means (along with blisters) of obtaining depletion of the head. With you he recommends mercurial purgatives; but having advised them to be *stimulating*, it may be inferred that he has not been influenced by your necessary precautions against such doses, as would excite nausea and vomiting. For a stimulating purgative must either be in such quantity, or of such quality, as would in many cases, especially where the stomach is so frequently disordered, prove actually emetick—an effect which, you properly observe, would hasten considerably the progress

progress of the disease; and I would add, an effect which must be highly pernicious at its commencement—a suggestion which, indeed, you likewise offer, when speaking of the exhibition of vomits.

Touching vomits, we may here remark, that several years ago it was started as a question, Whether they be or be not, safe medicines in febrile disorders *caput petentes*? Applying the question to hydrocephalus internus, which I reckon of a febrile nature, and most certainly *caput petens*, I would answer, That here emeticks are in my opinion injudicious remedies, especially in strong doses at the beginning of the malady. And I ask, would you give them at this period, or indeed at any other, upon the principle of promoting absorption by the general concussions arising from their operation?

But to return.—On purgatives, when they act merely as such, some eminent practitioners have placed considerable reliance. The late Dr. Macbride, distinguished both for skill and talents, attributes his success in some cases to purging, and considers it the rational method of proceeding; which opinion he strengthens by reporting an instance, terminating happily by those means, under the management of Dr. Haliday of Belfast, a physician deservedly high in the estimation of the publick. But to me it appears, that in attempting the cure of hydrocephalus by catharticks as principal remedies, they should in this view be confined to the early stage of the complaint; and, if then unattended

with advantage, they ought not to be carried to the more advanced state, except in the guarded manner which you recommend.

Drains from the head, made by setons or issues, as you properly observe, being dilatory in their operation, are not appropriable as cures to hydrocephalus internus, in the usual bounds of its course. But in a lingering, or chronick case, there may be room for their application; and as prophylacticks they may be introduced with strong expectations of advantage. For instance, according to your suggestion, in a family where one child or more shall have already died, affected by the usual symptoms of the disorder; if on any subsequent occasion, some other child should exhibit morbid phænomena indicating a tendency to a similar state, “setons or issues may have time to operate, and therefore ought to be recommended.” And where no family propensity to the disease can be traced, if symptoms appear which threaten future mischief, the remedies, whose influence will be most permanent, namely, setons or issues, are perhaps best adapted to the relief or preservation of the patient.

With a similar view, viz. to obviate a morbid accession of blood to the head, might I venture to name compression of the carotids? This question is suggested by finding that Dr. Parry actually moderated the symptoms of phrenitis and mania, by pressure on those vessels in the neck. Where indications of turgescence and other propensities are manifest,

would

would it do any harm to press on the carotids a certain length of time daily? To prevent injury in the trial of this expedient, a spring machine might be contrived to compress the arteries, without materially affecting the veins or lymphatick vessels.

But here it may be asked, would the degree and repetition of the pressure, requisite to produce the desired effect, be in danger of causing too great an anatomy in the brain, and thus, by frequently suspending the stimulus of blood, lay the foundation for greater serous effusion? Or, in plethorick habits and the older subjects, would the necessary compression, by interrupting the circulation, tend to promote apoplexy? Or, what other bad consequence might be apprehended from this project? Yet, however hypothetical it may appear, I am against stifling a single idea that has for its object even the mitigation of a disease, which so often baffles the skill of the most experienced physicians.

Your advice to preserve the patient's head in an easy elevation whilst in bed, is a good regulation in the course of the cure; and the same idea extended, might prove very serviceable in a plan of prevention. Several years ago, some students, who were much afflicted with headachs, sore eyes, and sore throats, applied to the celebrated Winslow for his assistance. As their complaints did not yield either to bleeding, or the best adapted medicines, this distinguished physician and anatomist made some inquiries respecting their usual mode of life; and

he found, that they had a custom of lying low in bed with their heads beneath the pillow. Upon this discovery, he enjoined a change in their manner of lying ; they obeyed him ; and they soon got rid of their maladies.

The same idea struck Dr. Lettsom ; and he has applied it to the point under consideration. With me he maintains, that hydrocephalus generally prevails in children ; owing to the great laxity of their solids, and the larger proportion of their fluids : And he asks, May not the usual mode of nursing likewise contribute to its frequency ? Those are in general reputed the best nurses, who shake and toss their little charges with the greatest vehemence, which, considering the delicate subjects upon whom such gymnasticks are performed, may be productive of more harm than good. The custom of permitting children to sleep on the lap, with the head sometimes hanging down for hours, would in grown people occasion painful affections of it ; and why not be hurtful to infants, whose brain is more vascular ?

But it is not during the period of nursing only that children are exposed to these dangers ; for when older and more at liberty, regardless of the consequences, they are apt to place themselves in very improper attitudes ; sometimes standing on their heads, at others striving who shall hang the longest over rails with their heads downwards ; besides the violent exertions of running, leaping, &c. to which they

they are naturally inclined. Instances have occurred, where even parents, ignorant no doubt of the risk, but indulgent to their little fondlings, have ministered to amusements of this pernicious kind, which have been followed by hydrocephalus in its most direful form. Should not then such calamitous events serve as cautions against those exercises of children, which oblige them to hang down the head, for a length of time, and which may be suspected to excite turgescence of the brain?

Leaving to the succeeding part of this Letter my intended remarks on Pediluvium, with some observations upon other articles of cure, I here proceed to examine (under impressions similar to yours) the merits of the celebrated remedy, Mercury — a remedy held in such high estimation by certain practitioners, that they deem it almost a specifick.

The first case, in the year, 1775, in which this Medicine was employed by Dr. Dobson, appears to be one of the most favourable to its reputation that I have had an opportunity of inspecting. An Emetick, a few grains of Calomel, a little Tartarised Antimony, a Pediluvium, and one Blister, being administered without relief, the mercurial course was commenced, and followed by the happiest effects — an abatement of the disease in forty-eight hours, and afterwards a perfect recovery.

The next case, that of a child seven months old, treated by Dr. Percival, in the year, 1777, had not

an equally fortunate termination. Only a temporary advantage having been obtained from a Blister to the back, an Emetick, and laxative doses of Magnesia, the mercurial plan was adopted, in consequence of information from Dr. Dobson of his success in the preceding example. In the space of a week, one hundred and ten grains of the milder mercurial ointment, which contain about twenty-two grains of mercury, were consumed in the usual way of friction; and it was conjectured, that a portion of two grains of calomel, which had been given separately as purgatives, might also have been carried into the circulation.

Combining other circumstances with this statement respecting the mercury, some doubts arise of its effects on the salivary organs, and consequently of its real usefulness. We are told, that the child's mouth, which had been dry, became moist in the course of twenty-four hours, and often filled with saliva. But by the friction of two scruples of the ointment, which contain about eight grains of crude mercury, four of which might be slowly absorbed, is it usual for marks of salivation to appear in so short a space of time, and particularly in a sucking infant? The author himself says, the tongue only *appears* swollen; although it and the gums are sore and moist, yet the breath is not offensive; and the symptoms of salivation are not violent. As the patient laboured under a severe fit of dentition, and a slow irregular fever, from these might arise the dry state of the mouth, and affection of the tongue.

tongue. When the irritation was diminished by the Blisters, a moisture in the mouth, and even a flavering, might ensue, which would produce the apparent foreness in the gums and tongue, as frequently happens in those cases of exasperated dentition. Besides, experience shows that a mistake might have arisen with respect to the cause of these circumstances, and occasion a deception as to the salivating effects of the mercurials. The mouth has been observed to grow moist and fill with frothy saliva some days before death, at the age of four or five years, when the discharge could not be ascribed to the excitement of the salivary glands by teething. And we may take into account the remarkable difficulty with which hydrocephalick subjects are affected by mercury, owing to the peculiar torpor and inactivity of their absorbent system.

However just these suspicions may appear, there are grounds for believing with Dr. Simmons, that the mitigation of the symptoms in this case may be ascribed rather to the effect of the blisters, than to any beneficial operation of the mercury. Nay he thinks, that the mercury, supposing that in so small a portion it proceeded the length of affecting the mouth in any degree, was in such procedure even prejudicial. For he has remarked, that, in infancy, when the general irritability is great, particular organs are not so readily and independently affected by their peculiar stimuli, as they are in advanced life, when the general irritability is diminished. Hence a salivation from the use of mercury, in very
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young subjects, has sometimes been preceded by convulsions; whilst, in the generality of adults, it is attended with no other symptoms than what the state of the mouth may naturally be expected to produce in the rest of the system. Whether, then, it is asked, if the mercury in the present instance had any effect, might it not have added to the irritation of the gums, and thereby have contributed to keep up the convulsions, under which the child expired?

But it is not probable that, in the case under review, the mercury did act by stimulating the salivary glands, and thereby lessening the fluid discharges in the ventricles, if any had been elsewhere than on the surface of the brain; because the flow of saliva does not appear to have been sufficient for the purpose; and the copious discharge from the Blisters, which were applied near the seat of the disease, would be equivalent to produce such an effect with more certainty. Besides, might not the diminution of the tumour of the head, which was also soon manifest, be due in part to the use of the brandy rags and of the emetick, conspiring to promote absorption, the former by their stimulus, and the latter by its concussion?

Whether these animadversions be well founded, or not, the motives may be assigned, which in all probability actuated the parties on the occasion. Commencing a new pursuit of which a person has adopted and cherished a fond idea, it is natural, as testified

testified by Dr. Percival, to be partial to any circumstance that seems propitious to the favourite opinion; and on the other hand, it is equally natural, as done by Dr. Simmons, to view such opinion with circumspection, to examine it with critical exactness, and to receive or reject it according to the result of the scrutiny. — The proceedings on both sides are useful to science. And with a similar intent, that of contributing to the science of Medicine, it may be worth while to try if medical records could have furnished Dr. Dobson with hints, which might have led him to the introduction of Mercury into the cure of hydrocephalus.

That mercury was used in certain febrile diseases of children, more than a century ago, we learn from Harris. Happening to converse with an eminent physician concerning the sublimation and sweetening of this mineral, he assured our author that he had a hundred times relieved boys in fevers, seized with a *lethargick dulness* and *sleepiness*, by the use of Calomel. This remedy, it is true, was not prescribed by the eminent physician here alluded to, on the principles upon which it is now employed in hydrocephalus internus. He gave it merely with a view to expel the matter which fosters worms in the intestines, by which he supposed the functions of the brain were disturbed. But it is remarkable, that the cases, in which it was useful, were those wherein affections of the head, demonstrative of hydrocephalus, were prominent appearances.

The quantity of Calomel, which children will bear as a purgative, is well known to modern practitioners, who prescribe it in considerable doses. To administer it largely with this intention, is not a new practice; for Sir Theod. Mayerne, a hundred and fifty years ago, bestowed particular encomiums on this preparation, given to the extent of twenty grains at a time. The prescription of small doses, in which it was ordered for many years, seems to have proceeded chiefly from its being often ill prepared by the chemist, and badly levigated by the apothecary, which made it a harsh medicine, and therefore practical men were deterred from using it with due freedom.

Mercury has been long employed not only as a local, but as a general remedy. More than fifty years have passed since it was highly commended by Dr. Gilchrist in inflammatory complaints and fevers. He affirms, that “in a genuine, exquisite, topical inflammation, mercury, as a purge and attenuant, is beyond every thing. In universal inflammation, there is not, perhaps, after bleeding, a more powerful antiphlogistick than cinnabar, camphire, and nitre. Cinnabar is in great credit with some in ferous and lymphatick stagnations, not yet *extra vasa*.” And, if a mild preparation of mercury be freely used in nervous diseases, admitting parallel indications with those in nervous fever, he saw no good reason why it might not be used in common fever also.

But mercury has been used for a considerable time with a view still nearer to that with which Dr. Dobson, in a state of apprehension and perplexity, flew to it for succour in hydrocephalus. In the memoirs of the Parisian Academy, for instance, we find that Du Verney succeeded in curing an abdominal dropfy, above ninety years ago, by raising a gentle salivation, after the operation of tapping had been performed. And, combined with diureticks, it has long been a favourite remedy with several practitioners in that disorder, before the evacuation of the water, especially where the viscera have been thought indurated. So that from these observations, it may be inferred, that Dr. Dobson, a man of erudition, who carefully considered his famous case of hydrocephalus, most probably recollected those facts respecting Mercury, and derived from them sanction and support in commencing and pursuing its application. At least it is apparent, that a person of reading and reflection might have drawn from those sources very good grounds of encouragement for the employment of Mercury in this disease.

Be this as it may, it appears that Dr. Percival, unshaken by the strictures passed on his first case, persevered in his opinion of the advantages of Mercury; and had it strengthened soon afterwards in the case of his own child, a girl, above three years old, who showed signs of amendment in forty-eight hours from its use, and in six days her recovery was perfected. A trial so fortunate, where the parties were thus tenderly circumstanced, must beyond doubt

doubt infuse a strong partiality in favour of the Medicine to which the cure is ascribed. We accordingly find the Doctor, in the year, 1791, steady to his early attachment, and a powerful advocate for the superior merits of the mercurial plan.

In confirmation of its preference, he reports that of twenty-six cases, the number that he particularly examined, eleven of the patients recovered, and fifteen died; in seven of the recoveries mercury was employed, and other remedies in the remaining four; in four cases of the deaths mercurials were used, and other remedies in eleven. These facts, drawn from authentick records, he considers as affording remarkable proofs of the pre-eminence of a mercurial course; and in this conclusion he is confirmed by his own experience. At the same time he acknowledges, that it is far from being a certain remedy; but reflecting on the almost constant fatality of the disorder, under every antecedent method of cure, he thinks it should be embraced as a valuable acquisition to the healing art.

Yet in the recital of one of the earliest cases in which mercury had been employed, our author apprehends that he too much disparaged former modes of treatment, and too hastily declared his sole and exclusive trust in the internal and external use of that remedy. Perceiving the error of this intire reliance, he now confesses that there are several medicinal aids, which, however insufficient in themselves to conquer this formidable disease, may contribute

contribute to so happy an event by mitigating pain and spasm, by increasing the ferous discharges of the body, and by doing even that for which his favourite remedy is chiefly selected, namely, promoting absorption.

With these views he now generally prescribes either opium, musk, ammonia, calcined zinc, squills, or blisters, in conjunction with the mercurial course, with which, he thinks, that they perfectly coincide. In pursuing this enlarged plan, he has experienced fewer disappointments than formerly, and has derived satisfaction under it, from the consciousness of not being chargeable with neglect or omission. Yet other practitioners, less fortunate in their trials with mercury than this justly-esteemed physician, have not regarded it with the same degree of partiality.

From your detail of nine cases, in which it was administered, I perfectly agree with you, that even the liberal use of mercury cannot be depended on as a source of relief. Although we find that those of your patients who recovered did use this remedy in the form of calomel, yet the quantity, as you observe, was so inconsiderable, when compared with the astonishing doses which were taken without the smallest effect by others, that it appears more reasonable to attribute their cure chiefly to the discharge procured and maintained by blisters.

But let us see what a critical examination of more numerous facts will produce: By a review
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of the forty-eight cases before noted, occurring since the introduction of mercury as a special remedy, I perceive that twenty-eight patients died, and twenty recovered. In twenty-two of the deaths mercurials were employed; in seventeen of these twenty-two, it was used rather freely; and in some of them it very soon excited a copious spitting; but in the four remaining fatal cases, it formed no part of the curative system.

Of the twenty fortunate cases mercury was used in seventeen, in the most of these freely, and in some to the extent of salivation; but signs of amendment appeared sometimes too early to give it the whole credit of curing, as other means esteemed powerful were in general liberally combined in the treatment; and sometimes it would have been ineffectual, or even pernicious, had not tonick medicines rescued the patients from a sinking debility. Moreover, in the whole seventeen cases, purging, blistering, &c. were either premised, adjoined, or used posterior to mercury; in some of them, instead of its characteristick action, it operated merely by stool, urine, or perspiration, which can be obtained without it; and in some, as in your examples, it was taken in too small quantity to produce a medicinal effect.

Amongst the remaining three recoveries, I find that one was accomplished by the vapour bath, a second by bleeding and purging, and a third by blisters, leeches, the warm bath, &c. Besides, two stated

as recoveries seem rather doubtful, namely, your soldier, and the dispensary child treated by Dr. Armstrong; concerning the issue of another case, mentioned by Dr. Percival, we are left in the dark; and some patients lived to lament the total loss of their eye-sight.

More cures, it is true, have been performed since the introduction of Mercurials, than appear to have been effected in preceding times. But this comparative success, as deducible from the above survey, may, in a great measure, be ascribed to increased attention to the phenomena of the disease; to a more assiduous investigation of its nature; and to an accumulation of cases from greater skill in the diagnostick. Hence a more judicious line of practice has been followed, as well with regard to the adjustment of other remedies, as to the prescription of mercury. At the same time, we should not forget, that the number of patients who died, was greater than the number who recovered, under its administration, in the proportion of twenty-two to twenty. Yet, as it is certain that this mineral has sometimes been of service, it should be always employed, but not so hastily and largely, as you, notwithstanding your doubts of its reputation, seem freely to advise. In my opinion, its use ought to be commenced with deliberation, pursued with constancy, and inspected with wariness.

From an instance in the foregoing survey it appears, that a remedy, the VAPOUR BATH, which you

have not touched upon, merits consideration. The case, in which it was successfully employed, was treated by Dr. Hunter of York. The subject, a child in the third year of its age, being afflicted with the disease in an alarming degree, and various remedies having been unsuccessfully tried, the Vapour Bath was at last recommended; not from any just reasoning on the case, but rather from a desire to cultivate a forlorn hope. The patient was therefore placed in a fumigating chair; and the operation was continued for the space of seven minutes. As the child bore it well, and seemed in some degree better on the succeeding day, our practitioner was encouraged to persist in the fumigation. He accordingly advised it to be repeated every other day; and, to his utter astonishment, at the expiration of twenty days, every symptom was diminished. The only medicine prescribed during the course of fumigation, were seven grains of Peruvian Bark twice a day, with a view to increase absorption.

To explain the operation of the Vapour Bath, he observes, that, when impregnated with aromatics, a temporary fever is brought on, and a copious perspiration is produced; which latter usually terminates, as soon as the patient is dressed. From these appearances, he thinks it may be rationally inferred, that it effectuates the absorption of water preternaturally collected in the ventricles of the brain. Or, as Dr. Percival thinks, who proposed this sort of bath to a patient, in 1788, by warming the whole habit, it may give energy to the nervous and lym-

phatick systems. On these grounds it does not appear admissible in the early stage of the complaint, lest by stimulating the sanguiferous vessels, it should add to the inflammatory condition of the meninges.

The warm bath, though not singly curative, has we find been manifestly serviceable as a subsidiary means. Like the vapour bath, its stimulus might be hurtful in the first stage of the disorder; but in the more advanced state, yet before the strength be too much exhausted for its use, the warm bath, by soothing pain, relaxing spasm, and rendering the skin perspirable, may turn out advantageous. Where the general bath is not eligible, the partial one, or Pedilave, which you advise for very desirable purposes, ought not to be neglected; or perhaps it should not be omitted in any instance; since, as you justly observe, the similitude which appears to exist between phrenitis and hydrocephalus internus, favours the idea of attempting to attack the proximate cause in the one case, by the same means that have sometimes been effectual in the treatment of the other.— But here give me leave to interpose a remark, namely, That it is difficult to comprehend how a disease can resemble phrenitis, if it be a species of apoplexy, as you consider internal hydrocephalus.

Another measure, which is not comprised in your *Méthodus Medendi*, is that of *ERRHINES*. This is an omission, which I would not expect to discover in a treatise on a disease, that is supposed

to bear an analogy to apoplexy, in which these applications have been long recommended. Not only in apoplexy, but in hydrocephalus, have they been prescribed; and we accordingly find an excellent judge of the subject write thus: “Sternutatories having sometimes proved beneficial in hydrocephalick affections, I therefore suggested the use of them in the present case.” This was a long-protracted and very devious case; but whether these remedies were applied, or not, the writer, Dr. Percival, does not inform us.

To me it appears, that, before assuming the use of Errhines on this occasion, precautionary considerations are very necessary: Our subjects are tender, irritable, and affected with plethora of the head, the particular part on which these medicines operate, and to which they give such a degree of commotion, as would, no doubt, prove highly pernicious in the incipient stage of the disease. Nay I am not clear, that they are perfectly safe in the more advanced periods, when vascular repletion may be diminished, and serous effusion on the approach, or in any degree existing. For I apprehend, that the shock of sneezing, as well as the agitation of vomiting, if by chance eventually harmless, would not promote absorption in the advanced torpid state, and would be a vexatious experiment to the patient, to whom the smallest motion of the head is generally so great an annoyance.

Still another remedy, omitted in your curative scheme, remains for our consideration:—I mean OPIUM. Taking the hint, perhaps, from the fore-mentioned practice of Dr. Gilchrist, this medicine, combined with mercury, was above thirty years ago successfully employed against inflammation of the liver, particularly that occurring in the East Indies. The success attending the use of this composition being communicated by a friend to Dr. Hamilton of Lynn Regis, he with equal efficacy transferred its application to other inflammatory disorders. The benefit obtained by the administration of calomel and opium in peripneumony, the first subject of trial, filled him with astonishment.

By these medicines he has known many a life saved in the symptomatick variolous, and morbillous peripneumony; he never saw any remedies afford so certain and speedy relief in obstinate, dry, catarrhus coughs; and the same means have proved equally efficacious in pleurifies. But the most extraordinary and early alleviation, that he ever observed resulting from calomel and opium, took place in phrenitis and paraphrenitis, inflammation of the brain and of the midriff, which was repeatedly experienced in a great number of cases; and so numerous and remarkable were the advantages derived from them, that he terms the composition, a *noble* medicine. To this special character of calomel and opium I can bear decided testimony, as I have prescribed them in pleuritick diseases, in which the stitches were piercing, and found them produce the most unequivocal

equivocal benefit—Dr. Hamilton's prescription is, a combination of tartarised antimony, camphire, and opium; but he always thought the latter of the most essential service, by relieving that extremely harassing symptom, pain.

Introduced into notice by the same Dr. Gilchrist, about the year 1735, opium, in moderate doses, was still more purely administered, at least without such active conjuncts as mercury and antimony, in fevers termed nervous, even at their beginning, and with signal advantage. When the disorder seizes with greater signs of acuteness or inflammation, a gentle opiate, given in some simple Julap, he assures us, will have a happy effect to allay the overbearing symptoms. He also concurs in opinion with his correspondent, Dr. Stevenson, in thinking that opiates may be safely administered to promote an expected crisis; and from him we likewise learn, that others spoke of the incredible success attending the use of opiates in fevers of a bad kind.

After those prosperous courses of practice, by an easy analogy, opium, as well as mercury, might be confidently introduced into the cure of hydrocephalus internus. Accordingly we find several practitioners making it a material remedy in their method of treatment. In three successful cases, Dr. Dawson, although an admirer of blisters, seems to ascribe the cures to aromatized opium, in the old form of *Thériaca Andromachi*. Several other practitioners have prescribed opium; and entertain favourable

avourable opinions of its effects. In a case, which ended fortunately, wherein digitalis, opium, and calomel had been employed, Dr. Percival ascribes the salutary change rather to the opium than to the fox-glove, but to the opium only as an auxiliary to the powerful action of the mercury, which had been previously and largely used in the way of unction. And, with this enlightened physician I agree, that “when the pains are very acute, opiates, in large and repeated doses, are essential to the cure; but if the patient be in a state of *coma*, they are obviously improper, and musk, combined with salt of hartshorn, should be freely administered.”

Before terminating this Letter, it may not be amiss to aid recollection by recapitulating the fundamental points of the general subject. From a retrospective view, then, I here conclude, that it appears nearly demonstrated, on the basis of facts and observations, that the acute species of hydrocephalus is an inflammatory disease; that the watery effusion is a consequence of the inflammatory state; and, therefore, that our endeavours to effect a cure should be directed against this state—early by all means—or otherwise, *sero medicina paratur*.

Nay I will ask, can a cure be accomplished after serum has actually been effused into the ventricles of the brain? Who, amongst our numerous and expert anatomists, has manifestly pointed out in this organ the existence of that system of vessels, the absorbents, whose office it is to imbibe and carry off
the

the peccant fluid? By what other conduits could this fluid be transported from those cavities? Until I obtain satisfactory solutions of these queries, I shall remain firmly persuaded, that there is not any such disease, as an internal hydrocephalus, *originating* from water shed into the ventricles of the brain; and that, when water has been apparently lodged in them, and a cure in those cases wrought, proofs are wanting to show that the fluid was removed by adequate conveyances.

Is it because lymphaticks have been sometimes noticed about certain arterial and venous passages in the head; is it because swelled lymphaticks in the neck have been supposed to arise from diseases of the encephalon; is it because some have asserted, that water has been thence absorbed—is it from these equivocal appearances and suppositions, that we are to credit the existence of absorbents in this organ? Notwithstanding such uncertainty, Dr. Warren, of Taunton, alleges there can be little doubt, that an absorption really takes place in the brain; which process, if not performed by those vessels, he thinks is probably brought to pass by the extremities of the red veins. Some great anatomists, it is true, have discoursed of absorbing veins; but later researches evince, that this opinion is erroneous, and absorption by red veins is now peremptorily denied.

Although in this point I cannot concur with the above judicious physician, yet in others more important, I am happy to observe a coincidence of our opinions.

opinions. He supposes, indeed, that the hydrocephalus internus may, at times, be founded on hydropick tendency ; but he is certain, that the frequent cause of the disease is inflammation, of which effusion is the consequence. And in support of this doctrine, he tells us that he has observed, “ that, in children of a puny and delicate constitution, the disorder is generally much slower and less violent in its approach, than in those of firmer and more robust habits, although the unhappy victims of it have commonly been children of the rudest health, and of the most active and lively dispositions.”

As to the cure of the disease, he is convinced, with me, that the indiscriminate use of mercury is extremely injurious, and hopes it will in future be employed with more circumspection. At the same time, considering the eminent men who have recommended it, he does not wish, in certain circumstances, to discountenance its application. In fact, he had no reason to speak favourably of it ; for in ten cases, which came under his care, and in which the mercurial treatment was pursued, the event proved fatal. Had these ten unfortunate cases, with many others of the like kind, been included (which they were not) in my comparative view, the number of unsuccessful examples would have exceeded much more considerably that of the successful.

I have the honour to be, &c.

L E T T E R I I I.

S I R,

AS the following case, though anomalous, manifests some traits deserving particular notice, I shall give it at full length, without making any apology for the minuteness of the history. By this means you will perceive, that the patient was vigilantly attended—that few phænomena escaped observation—and that scarce a rational expedient was omitted in the treatment.

C A S E I.

April the third, 1790, I visited Miss ———, aged between eight and nine years, of a delicate habit, fair skin, blue veins, and reddish hair. Her disposition of mind is lively, gentle, and affectionate. Her appetite is so averse against animal food, that the vegetable kind, principally bread, constitutes the major part of her more solid aliment. For some years, she has been liable to frequent, tormenting
headachs,

headachs, and severe stomach sickness ; which were always removed at the time by an emetick, whose operation pumped up some bile ; and an Empirical Nostrum, of which she took considerable quantities, came in for a great share of honour on those occasions.

A few weeks ago, her dancing-master observed an unsteadiness in her limbs, which he imputed to some recent negligence, as she before had been remarkably attentive and steady. Soon after, her parents took notice of an unusual tossing of the head ; strange gesticulations of the extremities, particularly in those of the left side ; and an irregular hurry in her motions. These appearances they, for some time, attributed to tricks or childish affectation ; and did not seriously attend to them, until they manifestly increased, accompanied with diminution of appetite, coldness and impaired use of the left arm, and some impediment of utterance.—She had a catarrhal complaint, attended with a severe cough, before the convulsive gesticulations were noticed.

Upon examining her pulse, it was found slow and small ; and on inspecting her eyes, they looked regular and sound. Her bowels are tardy ; which is their habitual disposition. Her head is free of pain, and disturbance — upper lip tumified — sleep good and composed — no thirst.

In this situation, a large blistering plaister was immediately applied between the shoulders ; a flannel

nel shift was ordered; and the diet most acceptable to the palate was allowed.

4th—The spasmodick contortions much increased — eyes more convolved, yet vision correct — pulse larger, harder, and quicker—voice feebler, and less articulate — considerable prostration of strength — head disengaged. Five grains of Musk, five drops of Thebaick Tincture, and ten drops of Spiritus Ammoniaë Compositus were given every hour; an Anodyne Volatile Liniment was applied frequently to the external fauces; two foetid Injections were administered; and, in the evening, Chalybeates with Bitters were made additional internal Medicines.

5th—Convulsive motions appeased — Musk Mixture and Liniment continued, but the former at greater intervals.

6th—Symptoms nearly as yesterday—Musk Medicine pursued, with the addition of Valerian Infusion — Chalybeate composition resigned, as it seemed to disturb the stomach—Rhubarb, Calomel, and Aromatick Powder given, to open the bowels, in which they happily succeeded.

7th—Continues better—Antispasmodick formula continued.

8th—Convulsive twistings, particularly of the eyes, abated—Laxative Powder repeated—A strong aqueous

aqueous Infusion of Peruvian Bark and Valerian was prescribed.

9th—Laxative repeated—Two drams of Peruvian Bark, to be taken this day, in doses of a scruple, washing down each dose with two table-spoonsful of a strong Infusion of Valerian.

10th—Three grains of Cinnabar added to each paper of the Bark, and four drops of Thebaick Tincture to each spoonful of the Valerian Infusion. This evening an alarming faintishness came on, succeeded by languor, oppression, and much agitation. A draught, consisting of twenty-five drops of Thebaick Tincture and twenty drops of Vitriolick Æther, given at bed-time.

11th—Better to-day.—Bark, Cinnabar, Valerian, and Thebaick Tincture repeated—also Fœtid Injection and Laxative Powder. In the evening our patient, placed on an insulating stool, was electrified between the shoulders, during three or four minutes, by friction over flannel; and afterwards a few sparks were drawn from the shoulders and left arm through the cap of a director—Pulse fuller and stronger—perspiration not increased.

12th—Two small shocks, about $\frac{1}{10}$ of an inch, were passed through the shoulders, and two through the haunches; after which a few sparks were drawn from the trunk and extremities; and a little friction used

used. — No sensible effects on the pulse or skin—
Stomach sickness and vomiting—Gas, extricated
from fixed vegetable alkali, by lemon juice, administered with effect against the vomiting.

13th—Electrified as yesterday, and without any perceptible effects. Yet she has been visibly better since the 11th, which cannot be ascribed to the electricity solely, as she likewise takes Medicines.

14th—Five shocks of $\frac{1}{16}$ of an inch were sent through the shoulders and haunches; some sparks were drawn; and the electric stream was thrown from a metal point over the left hand and arm. For some minutes after the operation the pulse was not felt, and when examined it was not sensibly affected.

15th—Electrified as yesterday — pulse not acted upon. From the first, she has had a terror at the electric process, which emotion was greatly augmented at every time of its employment. Might not this terror operate as a sedative on the pulse, and prevent it from being stimulated and raised, except on the first occasion, when the dread was not so great, as on the subsequent trials?—The Bark, Valerian, Foetid Injections, Laxative Powder, and Composing Draughts were continued during the use of the electricity.

16th—The Musk Mixture, with Bark, Rust of Iron, and Aromatick Powder were ordered—Night
Draught

Draught repeated. These Medicines were continued till the 23d, with little variation. Agitations sometimes greater, sometimes less — tumefaction of the upper lip subsided—and the cough, which at the beginning was rather severe, is vanished.

21st—A little after One o’Clock, P. M. our patient was taken out of bed, and put naked into a tub of water, somewhat more than milk warm, where she remained only three minutes, because she fretted much, and complained of the coldness of the water. Whilst in the bath, she was rubbed ; when she came out, her skin was well dried ; and, being wrapped up in flannel, she was put into bed, where she lay half an hour to rest.

Before she went into the bath, her pulse was temperate ; after she came out, it was nearly the same ; and, if any change, it felt rather slower and weaker. In the evening, the pulse was stronger and fuller—skin warmer, but moist—spasms, as they had been all the morning, moderate — ate veal, and drank some port and water after it—slept seven hours at one time, and two hours at another, last night.

22d—Bath warmer—staid in with a bathing dress five minutes, during which she was rubbed — less fretful in the bath than yesterday — did not see her immediately before or after bathing, and therefore the pulse, &c. at those times, not ascertained—had a motion to-day—slept last night seven hours without opium — a good deal agitated, both arms and face,

but

but not the eyes, in the middle of the day — has a little headach, which is only the fourth time since her present illness — ate beef-stake for dinner. In the evening, less agitated, but languid.

23d—Bath colder — staid in five minutes — after coming out agitations considerable — pulse little affected; if any alteration, rather feebler — vomited twice—no animal food to-day—had a motion—slept above seven hours last night without opium. In the evening, less agitated, but languid — took Saline Mixture—omit Musk, Bark, and Steel.

24th—Bath colder, and staid in a shorter time— not so much agitated in the morning — slept well without opium—countenance and under jaw a little agitated these ten days past.

25th—Bath not warmed—dipt without a bathing dress—some time after bathing agitated considerably —ate no flesh meat to-day—sat up several hours without leaning down on the sofa, where she usually reclines the most of the day—walked also a good deal —spoke more, and more interested in surrounding occurrences—slept well last night without opium—tonick and antispasmodick Medicines resumed.

26th—Bath cold, and bathed as yesterday—more agitated after it, and more all day than yesterday—talked a good deal, and articulated pretty well—ate some mutton—walked some — did not rest well last night, nor had she an opiate—had three easy stools —above medicines continued.

27th—From this day till the 1st of May, inclusive, circumstances continued nearly as they were on the 26th.

May the 2d—After bathing, quite free of agitations for some time, but commenced again as usual—appetite not so good. Began this day to take half a grain of Calcined Zinc morning and evening, and an aromatized Infusion of Colomba Root twice a day. Went out in a sedan chair, without any other visible effect, than a small degree of weariness.

3d—No steadiness after bathing to-day—medicines continued—appetite still worse—did not rest well, although an opiate was given last night—complained of a pain in the arm, and, on examination, the Pronator Radii was found a little tumefied—went out in the sedan.

4th—Hair cut short, and head dipt in the cold bath—Zinc increased to a grain night and morning—Infusion continued—sweat a good deal these two or three nights past—appetite farther lessened, yet the strength continues as good as before.

5th—From this date till the 8th went out in the chair twice—bathed every day—appetite improving—sleep good—bowels regular—Zinc and Colomba continued—spasms less, particularly on the 6th instant.

8th—Bathed—throat a little sore—slept well last night—appetite good—spasms composed—gaining
F strength

strength and flesh—muscular pain gone—medicines pursued.

9th—From this date until the eleventh, bathed regularly—one day took no animal food—used exercise as before mentioned — 10th and 11th, walked across the room without assistance or support—spasms in general much settled—feldom agitated—rests well — 11th, went a mile and a half in a carriage with little fatigue—Zinc increased, the 10th, to a grain and a half, night and morning—Colomba Root continued—some nights, perspiration considerable.

12th and 13th — Bathed and exercised — did not rest so well these two nights past—13th, the morning pill sickened the stomach, but did not occasion vomiting—appetite diminished—spasms lessened—continue the Zinc, and return to the Peruvian Bark.

14th—Felt an irksome formication this day in the face—in other respects as yesterday.

15th—Bathed and exercised — stomach sick, and vomited two or three times — took Spiritus Ætheris Nitrosi, soon after which she complained of a pain in her stomach — is languid ; yet the agitations are not so great as yesterday.

16th—Rested well last night—stomach better—bathed and exercised — spoke distinctly this evening — Zinc laid aside yesterday — Steel and Bark resumed—bowels regular.

From

From the 17th till the 21st, when our patient was removed to the country, she was bathed, exercised, took her food, rested at night, and in every particular seemed to be gaining ground; at the same time persevering in the Bark and Steel.

From the 21st of May, until the 22d of June, I did not see our patient, but had a pretty regular and correct account from one of the family, who kept a memorandum of the principal occurrences, of which the following is an abstract :

21st—Rode in a carriage about nine miles, and was not as much fatigued as was expected—ate some lamb at dinner — slept pretty well, but was not refreshed.

22d—Did not eat much breakfast, but was in good spirits—ate mutton for dinner—slept better.

23d—Slept well — did not take a good breakfast — was much agitated all day.

24th—More quiet — no appetite for breakfast—rode about six miles in a carriage, which fatigued her considerably — very sick at stomach, reached, vomited, and threw up phlegm.

25th—Slept well — made a good breakfast — ate some lamb at dinner—bathed and took the air every day.

26th—After a good night agitated very much all the forenoon—took mutton for dinner—agitations as great in the evening, as in the morning.

27th—Had a good night; yet was so much agitated, that it was thought necessary to give the Antispasmodick Medicine along with the Tonick; which latter she had regularly persisted in—bowels so natural as not to require the laxative powder—has some little use of the left, but not any of the right, hand.

The most material proceedings, from the 28th of May until the 9th of June, inclusive, are mentioned in the following extract of a letter, dated on the latter day.

“ I have the pleasure to tell you, that A—— continues to recover; though, I do not think, so rapidly as at her first coming into the country. Friday the 28th of May, the day I wrote last to you, she was very sick in her stomach; threw up a great deal of phlegm; and, after a good night's rest, was as usual next day. She finished the Musk Medicine: I continued it—giving it only twice a day, for the last fourth part of the bottle; which had a very good effect on the increased agitation. She is now, in general, very quiet; but has little, I may say no use or power of her right hand; the left she can do almost any thing with. She has gone on pretty regularly; much the same as I gave you particulars of in my last, until yesterday, when she was sick again, and

and threw up most heavy phlegm, like whites of eggs: but, after a good night, she is well again to-day. I don't think her appetite continues as good as it was. I still try to prevail on her to eat some animal food, but in general she would not choose it. Her powders are all out—I will continue to give the Bark, until I hear from you."

Notwithstanding those two sick days, she had got strong and steady in the muscular powers, so much so that she was able to *run about*, to use her left hand nearly as well as ever, and to command her right hand in a visibly progressive degree of improvement. In this pleasant and encouraging situation she continued till the 13th of June, when she complained much of headach, and of stomach sickness, which was prevented from amounting to actual vomiting by a diligent use of the Saline Mixture.

Three days having elapsed without any relief from these symptoms, on the fourth (I being at an inconvenient distance) she got by domestic advice two grains of Tartarised Antimony, with Chamomile Infusion, which excited vomiting, without causing any save a watery evacuation. At the same time, her night's sleep was not as good as usual; her appetite, as might be expected, was much impaired; some involuntary motion affected her right hand; and she complained that what she looked at appeared clouded, or rather striped with red and purple.

18th—Her head was thought to be so bad, accompanied with stomach sickness, that they gave her a second emetick, which produced much phlegm and bile, and seemed to procure relief; but on waking next morning, she complained equally of headach. After returning from the bath, she was as ill as ever, begged for more Tartarised Antimony, and went to bed early in the evening very feverish. About nine the same evening, three grains of James's Powder were administered; after which she had a tolerable night; but soon after waking in the morning, she was as ill with her head, as she had previously been—the James's Powder had no visible effect.

20th—At eight in the morning she got four grains of the Fever-Powder, which proved emetick—slept a good deal in the course of the day, yet complained much of her head—at five in the evening and at ten the Powder repeated—had a gentle perspiration for some hours; yet the headach, quickness of pulse, and heat remain undiminished—her heart too beats with remarkable rapidity; and she is very much flushed.

21st—Has had very little sleep—very hot—pulse quick, but not so strong as yesterday—sighs frequently—Rhubarb and Magnesia given without producing any effect—nor was an emollient Injection more successful.

In consequence of this continuing illness, I was sent for and arrived the 22d, when I found her complaining grievously of the headach — fits of incoherent mutterings, but in general sensible — face flushed — eyes composed, and regularly affected by light — tongue furred, but no thirst — skin hot, with partial perspirations — pulse 90, hard and full — anxiety about the præcordia — bowels costive — urine generally sufficient — no appetite for food — imperfect sleep — voice strong, and articulation distinct — *convulsive agitations vanished, and is possessed of as full power of her hands, &c. as consistent with her lately diminished strength.*

To the crown of the head, shaved and embrocated with cold vinegar, a large blistering plaister was immediately applied. An effervescent Mixture, with Infusion of Colomba Root, was ordered to be freely exhibited — emollient injections were directed — two grains of Calomel were desired to be certainly given every night — and, to compose the anxiety and restlessness, a few drops of Thebaick Tincture were added to two doses of the Neutral Mixture.

23d — Rested tolerably during the night — blister operated fully — expressed much relief of the head — pulse and other circumstances as yesterday — vomited some yellowish watery fluid soon after dressing the blister — A lividity about the nose, and lower internal parts of the eye-lids — This day I was obliged to return home.

Next day I was informed by letter, that, soon after I left my patient, she was seized with a violent delirium, raving incessantly, and requiring force to hold her in bed. On this attack, an emollient injection was thrown up, which procured an evacuation, but no relief. She lost her speech suddenly, and groaned continually—rolled her head much from side to side—collision of the teeth—deglutition difficult—in some time a copious sweat broke out.

In the raving, whilst she could speak, she frequently said “Mother ! why did you waken me by wiping my mouth ?” Hence her friends supposed that she had suffered a paralytick stroke ; which afterwards, indeed, appeared to be the case, from a distortion of the mouth, and a subsequent privation of the right arm.

25th—In the afternoon, I again saw her, and found her in a comatose state.—low delirium—strabismus towards the left side—pupils dilated, and insensible to light—flushed—breathing quick—suspiria—partial perspirations—convulsively affected in the left side—torpid in the right side—deglutition much impaired—pulse 110, and unequal—costive.

Two blisters were applied on the head—four grains of Calomel were given—a dram of strong Mercurial Ointment was rubbed on the thigh—and Leeches were proposed for the temples. An injection of Salt Water, which had been given before my arrival, brought off some dark-coloured excrement abound-

ing with substances each about the size of a small grain of wheat, consisting of a whitish hollow body, with a black apex.

26th—Was quiet during the night; but the comatose and other bad symptoms continued—a large, solid, dark-coloured, but not foetid, stool passed early in the morning, containing many substances in shape and colour similar to those above mentioned, but destitute of the black apex. Soon after this, a smaller and thinner stool, without any of those bodies, was voided—two leeches applied to the right temple, from which about two ounces of blood were extracted—two grains of Calomel given—left arm and hand more convulsed—right arm continues motionless.

27th—Between eleven and twelve o'clock last night our poor little sufferer was seized with a general convulsion; fits of which recurred at different intervals, and in various degrees of strength, until the last. Deglutition became somewhat better, and articulation was attempted, a short time before death; which closed the lamentable and melancholy scene about two o'clock the ensuing morning.

DISSECTION.

The cranium being raised, the blood-vessels of the dura mater were turgid and reddish, exhibiting strong marks of a preceding inflamed state. About two ounces of blood flowed from the longitudinal

sinus

sinus, by wounding its anterior extremity with the saw. The cortical and medullary substances of the brain showed no other morbid appearances, than a kind of serous diffusion over the circumvolutions of the lobes. The septum lucidum was found; but the left lateral portion of the plexus choroides seemed inflamed. Upon cutting cautiously into the left ventricle, a gush of a watery fluid, amounting to two ounces, issued immediately after the point of the scalpel; and the right ventricle produced about half that quantity. In the remaining important parts of the encephalon, no signs of disease were observed.

Before proceeding to offer any remarks upon this curious and interesting case, in order to give the method of treating it a more competent title to your approbation, I take the liberty of acquainting you, that I had the assistance of my friend Dr. Plunket, of Dublin, by letter; and that I had, on the spot, the aid of my fellow-citizen, John Ferguson, Esq; an experienced practitioner, on whom a great share of confidence has been long bestowed by a considerable circle in this country.

Permit me now to remark, that the above case evidently appears, both in its incipient stage, and in the major part of its course, to be an instance of CHOREA, or St. Vitus's Dance, having existed above ten weeks from the commencement of my attendance, before symptoms of hydrocephalus could be said to have shown themselves; which at last, indeed, put an end to the child's sufferings. The perusal of

it naturally excites some considerations on the original disease; and on the manner in which convulsive affections produce watery effusions in the brain.

That the Chorea is a rare disease, or at least that it does not often occur in a common circle of practice, may be inferred from the total silence of some systematick authors, and the deficiency or brevity of others, on the subject. By the ancients, and by most of the moderns, it appears to be considered under the general head of convulsions, although it be attended with several peculiar circumstances. That distinguished nosologist and physician, the late Dr. Cullen, in the earlier editions of his synopsis, supposed it to be merely a variety of those maladies; an error which he not only corrects, but acknowledges in the fourth edition of that work. His falling into that mistake is the more unaccountable, since Sydenham had given a concise, yet graphical description of the disorder; introduced, indeed, very immethodically in the Essay on the rise of a New Fever.

To the portrait drawn by Sydenham, however improperly stationed, little addition appears to have been made by subsequent writers; unless we include the mention of some fatuity, and hysterical inconstancy of mind. In the definitions, which are supposed to comprehend the pathognomonic symptoms of the disease, I do not find that it is, even in the best of them, strongly characterized. Sagar says, “*Est motus semivoluntarius unius lateris, vel totius corporis*

corporis in gressu, situ erecto, aut comestione, gesticulationem, aut ridiculam histrionis festinationem, referens." Cullen's character is "Impuberes utriusque sexus, ut plurimum intra decimum et decimum quartum ætatis annum adorientes, motus convulsi ex parte voluntarii, plerumque alterius lateris, in brachiorum et manuum motu, histrionum gesticulationes referentes; in gressu, pedem alterum sæpius trahentes quam attollentes."

Still more imperfect definitions might be enumerated from other nosologists; but without spending time in exhibiting those, or in animadverting on the two already cited, I shall offer one differing in material points from some, and supplying the defects that I conceive to be in others, which may serve at present as a critique upon all.

The Chorea, therefore, I would define, A disease consisting of involuntary convulsive gesticulations, commencing and continuing chiefly in the extremities of one side, but not without being, in some measure, communicated to the head and trunk; affecting sometimes both sides; proceeding with irregular paroxysms an uncertain length of time, at least six or eight weeks, whether the patient lies, sits, or walks; when doing the latter, compelling him to trail rather than lift the foot or feet; the external senses remaining nearly perfect, but the internal involved in a degree of fatuity; and attacking persons of both sexes, mostly the female, generally from seven to fourteen years of age.

From this character, together with the phænomena circumstantially detailed in the preceding case, so good a diagnosis of the malady may be acquired, that it would be superfluous here to construct a formal history. I shall only remark, that, although the Chorea is generally confined to persons from seven to fourteen years of age, we sometimes meet with it in advanced life; of which I shall give you an instance.

C A S E II.

John M'Keon, aged about sixty-three years, by trade a linen weaver, and a smart, hardy little man, without any apparent cause, on the 6th of January, 1792, was seized with convulsive writhing motions in the right arm and leg. He is sensible; and does not complain of headach. He sleeps little; but when he does get any, the spasmodick contortions subside. Although addicted to much talking in his health, yet his loquacity is now greatly increased.

The convulsive gesticulations continued for some weeks with considerable violence, and very little interruption. His appetite failed; and he became weak and emaciated. At length, either from an effort of nature, or from bruises which the extremities suffered by almost incessant collisions, suppuration took place in the thigh and at the knee, which discharged some pus, and soon healed. After this event, the gesticulations, particularly those of the arm, grew moderate; he recovered strength; and he

he remained in a comparatively quiet and supportable condition till February, 1793, when a typhoid fever, then prevalent in his family, laid hold on him, and put an end to his existence.

Immediately succeeding this case, I find another stated in my register, which, appearing to be of a spasmodick nature, and to be attended with interesting circumstances, I shall here take the liberty of reporting.

C A S E III.

Miss ———, a child of four months old, thriving, and in general healthy, soon after birth was observed to take a kind of suffocation when she fell into a violent fit of crying. The affection, however, did not arise to any alarming degree for some weeks; and she passed through inoculation in a favourable manner, without an attack of it that was worth notice.

But on the 14th of February, 1792, early in the morning, whilst taking some food, she was seized with a paroxysm, which began with a suspension of respiration, followed by a lividity of the lips and under the eyes. To these circumstances succeeded paleness, cessation of the pulse, and other appearances incident in a *delignium animi*. In a short time she showed signs of revival; but she was not thoroughly reinstated for two or three days, her eyes
being

being during this space of time dull, her countenance languid, and her stomach exhibiting some symptoms of indigestion.

Soon after that she began to recover from this fit, she vomited and purged a little, and seemed to suffer considerable pain, as indicated by writhings of the trunk and extremities. On this emergency, the open air was freely admitted into the chamber; the legs and feet were immersed in warm water; to the wrists, temples, and other parts, the volatile alkali was applied; a foetid Injection and one of warm water were successively administered; and a camphorated, anodyne Liniment was diligently rubbed over the abdomen. Against the friction had been used twice, she got ease, fell asleep, and awoke in a favourable situation.

She continued well until the beginning of March, when pain of the gums, heat of the skin, restlessness, and muscular soreness on motion, pointed out a paroxysm of distempered dentition. Upon the increase of these symptoms, I was called to visit the child on the fifth of the same month, and observed, during my visit, a slight attack of the strangulation. I ordered her to be forthwith purged; which was soon and briskly effected; but without averting the assault of her innate and dangerous enemy.

For between three and four o'clock in the afternoon, I was called in an excessive hurry to revive the poor infant, who, the messenger assured me, appeared

peared to be absolutely dead. In a very few minutes I arrived on the spot; and soon had reason to believe that the fact stood very nearly as it had been represented. I found the body lying motionless on a woman's lap; the countenance pale; the respiration suppressed; and the pulse ebbing in its obscure and final touches.

The body was instantly stripped and rolled in a warm blanket; heated flannels were applied to the trunk and extremities; stimulants were put to the nostrils and thrown up the anus; frictions were employed; and endeavours were used to inflate the lungs, both through the nose, and by introducing a pipe into the glottis. These measures were pursued zealously and assiduously for more than an hour; after which, yet without hope, but as an act of humanity, the body was laid in fleecy blankets close to the warm skin of an adult, where it was kept during some hours—all, however, without effect; *for the child is dead.*

Was this a case fit for the operation of electricity? I regret that circumstances did not admit a trial of the experiment.

In referring to several respectable authors on the diseases of children, I have not been able to find a description of this malady. I must, therefore, suppose it to be, if not a *New Disease*, at least a *Non-descript*, until I know when it was first noticed, and in what light it has been reviewed, by other practitioners.

At present, I shall apply only one or two remarks to this point.—Some modern chemists affirm that they can, in a very expeditious manner, teach the whole of their science, by combining in the name of a *mixt* the characters of the several principles of which it is composed. In imitation of this plan, were Nosologists to construct the name of every disease by introducing a certain number of the essential phenomena that belong to each species, some benefit might accrue to diagnostics. On these grounds, I might distinguish the disease, represented in the above case, by the denomination of *Tetanus Trachealis Infantum*. It is not *Fainting*; it is not *Convulsion*; it is not *Asthma*; nor is it *Croup*; the only disorders to which it can be supposed to bear even a remote analogy: However, do the symptoms in this case tend to corroborate the doctrine of Goodwyn? Or, is it probable that water would have been found in the ventricles of the brain after death?

That convulsive diseases occasion a watery effusion into the cavities of the brain, dissection sufficiently attests. But in this rapid case, it is not likely that water was collected, as there was not time for the vessels to assume a tone fit for such a morbid secretion. It is most probable, that death was caused by the same state that takes place in drowning, hanging, and suffocation, which the ingenious Mr. Coleman maintains to be *mechanical obstruction in the interior pulmonary vessels from collapse of the lungs, with a want of latent heat in the blood.*

With respect to the manner in which convulsive affections occasion a watery effusion in the brain, it may be observed, that persons liable to those affections exhibit a considerable degree of excitability, and that the principle of irritability is quickly accumulated and quickly diminished in their constitutions. Hence are derived the periodical or repeated paroxysms of those disorders, which, the innate nervous stimulus on the one hand, and the prompt renovation of the irritable principle on the other, will naturally constitute.

This habit is remarkably prevalent in childhood and in youth; periods which compose the spring-time of life. And, as in the vernal season, the vegetation of plants, which also depends on the mutual effects of stimulus and irritability, is in the greatest vigour; so in young persons, the same principles have their highest power, and are the agents of growth which conduct the species to its state of maturity. The principle of irritability is not confined to the fibre, or simple solid; but is also possessed by the fluids of the body, particularly by the blood. The heart, which contains so much of the fibre and is the fountain of the fluid, must be the centre of the principle; and the influence of this organ on the contents of the cranium is well known.

As in those ages, in which this constitution prevails, convulsions likewise prevail, the increased action which they produce will augment the impetus of the circulation, especially in the vessels of the

head:

head ; which we see is actually the case, since a considerable determination to that part is observed in those disorders. The determination increases the action of the blood-vessels, and inflammation is the consequence. This consequence is forwarded by the plethora, particularly of the head, which exists in the early and advancing stages of life ; and the whole train of symptoms, constituting *Febricula Hydrocephalica*, (the name which I appropriate to the disease) are then brought into view.

But how are we to explain the occurrence of effusion, where the accumulation of the irritable principle is not so vigorous, and yet the action of stimuli is assiduous ? In these cases I would conjecture, that the nervous stimulus, acting, as I suppose, on a mass of irritability less moveable than in convulsive habits, excites a passion, which, if violent, suddenly destroys irritability, or the vital principle, and death ensues ; or which, if moderate, engages only a part of the irritability, and the natural state of temper is regained for a time. To illustrate this reasoning by an example : In an account of the death of the celebrated Mirabeau we are told, “ Un tempèrament ardent et trop exercé a abrégé le jours de cet homme célèbre dont les talens faisoient l'espérance des amis et de la constitution.” Upon the report of poison having been administered, the body being opened, “ Ou a trouvé un épanchement dans un des lobes du poumon, et un amas de pus dans le pericarde de cœur ; il y avoit aussi un petit épanchement dans le cerveau, tous les autres viscères étoient en bon état.”

Does not this instance show, that an irritable temper, almost constantly exercised, may be a cause of effusions in different cavities, and of a watery effusion in the brain ; which conditions, in all probability, were preceded by more or less inflammation in the diaphanous membranes of those parts ? And must we not admit an irritability of temper in those persons peculiarly subject to hydrocephalus internus ?

But however seasonable we may suppose the theory, we should not suffer it to engross our thoughts so much as to divert us from attending to any opportunity that may appear likely to advance the practice ; especially in a disease delusive in its nature, alarming in its course, and too, too often fatal in its termination. To promote this end, namely, the extension of practical knowledge, an accumulation of facts is, undoubtedly, the aptest means. I shall, therefore, give you another history of hydrocephalus internus ; and then close the correspondence for the present.

C A S E IV.

April the 12th, 1794, in the afternoon, I was made an associate in attendance on Miss H——, aged a little more than eleven years ; and on approaching the bed, I perceived her labouring under great oppression, as evidenced in particular by frequent heavy sighs. Upon farther examination I observed the following circumstances : The pulse 92 and small, but equal ; the pupil of the left eye di-

lated, and insensible to the light of a wax rush ; the pupil of the right eye also dilated, but a little sensible to the impression of the light, and its vision in some measure remaining ; both eyes rolling, but without strabismus ; the left upper eye-lid depressed ; the tongue moist, and a little furred ; the skin dry and temperate ; the bowels confined ; thirst moderate ; and the patient lying, as for the most part she has done, on the right side.

The head was ordered to be shaved, and to be frequently embrocated with camphorated ammoniacal liniment—three grains of Calomel to be swallowed immediately — a dram of strong mercurial ointment to be rubbed in—and small doses of Tinctura Opii, with Vinum Antimoniale, (which she had been using) to be continued.

At nine o'clock, P. M. I found the pulse 115, small, and in some degree unequal ; the skin hot ; and the countenance, which had been rather pale in the morning, now considerably flushed.

13th—(noon)—Rested badly last night — moans much—pulse too small and fluttering to be numbered—right eye more insensible and vision imperfect. Ordered a blister to the head ; two leeches to the right temple ; the mercurial ointment to be repeated ; six grains of Calomel night and morning ; and the stibiated Opium to be continued.

At night the pulse was sometimes too fluttering to be counted, and sometimes eighty strokes might by attention, be numbered in a minute. From an injection, which she got in the morning, she had a copious motion; and she passed a quart of urine at one time. In the course of the day, she got some slumbers, but in general was restless, moaning, and uneasy—The leeches procured a plentiful evacuation.

14th—Very restless till two o'clock in the morning, after which she seemed to get some composed sleeps—called for bread and ate a little—left eye discharges sebaceous matter—right eye waters and as insensible as yesterday. At ten o'clock, P. M. the pulse 115, and small—thirst moderate—tongue furred but moist—made little urine to-day—passed no excrements. No marks of mercury perceptible on the mouth—repeat the Calomel and friction—dress the head with cantharides ointment—and add milk to the drink.

15th—Rested badly until five o'clock in the morning, when she became more quiet, but continued moaning—pulse 106 and distinct—eyes glazy and vision seems quite extinguished—both eye-lids depressed—less affected by external impressions, and less apprehensive, than yesterday—skin temperate. At night the pulse was the same as it had been in the morning—face a little swelled—gums rosy, and saliva gathering in the mouth as if mercurialized—had a severe strangulative fit, supposed to proceed from an accumulation of phlegm about the fauces—
could

could not be prevailed upon to swallow the Calomel in the morning, and, as the mouth appeared affected, it was omitted in the evening—friction and stibiated opium continued—takes lemonade, and gruel flavoured with wine.

16th—About eleven o'clock last night she became much worse, and could scarcely speak or swallow. At eleven o'clock this morning, her pulse unequal and ebbing—tosses her limbs greatly—keeps her left elbow rigidly bent—no other spasmodick affection as yet—respiration feeble and difficult—sinking fast—and about two o'clock in the morning of the 17th, she died.

Some hours before death, she voided a considerable quantity of urine, and of dark coloured, but not foetid, excrement. During the sinking period of the malady, she had almost constant tossing and writhing of the extremities, but no tonick or clonick convulsive state, if we except the rigidity of the left elbow, which frequently occurred, and continued for a certain space of time.

The account which I received of her situation previous to my visit was, That she had for sixteen days a feverish illness, supposed owing to worms, until two days before I saw her, when the disease assumed different and alarming features. At the beginning she lost her appetite, vomited often, was frequently thirsty, complained of pain in the head and between
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the shoulders, and had a quick, small, wiry pulse—Permission to open the head was solicited, but it would not be granted.

Having mislaid, and but lately met with, some necessary notes on the disease that we are handling—quicken'd by the perusal of certain recent papers upon the subject—and concerned at the repeated occurrence of melancholy instances, I am induced to address you in that form, the epistolary, which admits of the ease and expedition needful in a pursuit of such moment. And, in thus becoming rather hastily your correspondent, I have the honour of an earlier opportunity of subscribing myself,

Your respectful humble servant,

WILLIAM PATTERSON,

LONDONDERRY,

AUGUST 8th, 1794.

P O S T S C R I P T.

SINCE the conclusion of the preceding letter, I have to lament the fatal termination of another case of hydrocephalus internus; the history of which I may publish at some future period; but in the mean time I shall remark, that the phœnomena seemed to favour the phlogistick theory, whilst the march of the symptoms did not increase the credit of the mercurial plan.

Sensible of the advantages to be derived from synoptical views, I had constructed a table of several cases, exhibiting the age, sex, and treatment of the patients, together with the event of the disorder; but this I defer publishing at present, in hopes to have it in my power to enrich it by adding a number of cases at some succeeding season.



ADVERTISEMENT.

DIFFERENT opinions have been long entertained, and still are held, respecting the influence of the air upon the human body, as well in producing as in promoting health and disease. That a material connexion exists between these states of our frame, and that element in which we live, and move, and have our being, is incontrovertibly proven by observation and experience. Could we trace this connexion, and obtain even a tolerable knowledge of its laws, what a delightful prospect would it open to our view, and how valuable an acquisition would it be for Medicine and for Mankind! If ever there was a time to attempt such a research, this is the conjuncture——*now when* Chemistry has unfolded the nature of aerial fluids; *when* these fluids are already applied to medical purposes; *when* the constitution of the atmosphere is diligently explored; *when* the arts teem with suitable instruments; and *when* a more pure and rational philosophy is known in the world.

Encouraged by these favourable circumstances, the author of the preceding LETTERS has ventured to undertake, and has at present in considerable forwardness, a Work which he intends publishing under the title of “SPECIMENS OF PHILOSOPHICAL, MECHANICAL, AND MEDICAL INQUIRY, DESIGNED FOR THE PURPOSE OF TRACING THE RELATION OF METEOROLOGY TO MEDICINE.”

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This Work, which comprehends several correlative topicks, must consequently embrace a variety of matter ; and therefore the exertions of an individual, be them ever so strenuous, cannot render it as useful and deserving publick notice, as they might do by the help of an enlarged correspondence. Not only the philosopher, the physician, and the artist, but the private gentleman and the farmer, nay even the plainest observer, may contribute useful information on the subject.

The principal points demanding attention are, the topography of the place where the observations are made ; the direction and force of the winds ; the quantity of rain and number of rainy days ; the degree and frequency of hail, snow, frost, aurora borealis and australis, lunar halo, and thunder and lightning ; the appearance of clouds ; the endiometrical condition of the air ; and the ranges of the barometer, thermometer, and hygrometer. These are the general objects ; the particular ones are—in the province of the physician, the state of diseases, especially epidemics ; and in that of the farmer, the progress of vegetation. In the course of observation, in so extensive a field, other things may occur, which might likewise be turned to advantage ; and which, with INTELLIGENCE on the above heads, or on as many of them as can be noted, will be thankfully received.

Communications may be sent, directed to Mr. J. JOHNSON, Bookseller, St. Paul's Church-yard, London,

London, to Messrs. BELL and BRADFUTE, Book-fellers, Edinburgh, to W. GILBERT, Bookfeller, Dublin, and to the Author in Londonderry.

✧ The London Medical Society having approved of the intention of the above Work, it is expected that an advertisement, to the same purpose of the preceding, will appear along with the third No. of the Fourth Vol. of their Memoirs, already issued, or just issuing from the press.

